A REVISION OF THE GENUS *ISODACRYS* SHARP (CURCULIONIDAE, TANYMECINI)

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This is the second[2] of a proposed series of studies on the Tanymecini. In the present paper, the six previously described species of *Isodacrys* are discussed and clarified, and an additional seven species are described. The original nomenclature remains unmodified.

A total of 171 specimens from ten collections was studied. Several additional collections were given specimens of *Isodacrys* on the completion of the study. In the following list of collections examined and now containing specimens of *Isodacrys,* the name of the collection is followed by the abbreviation by which it is referred to in the text and the name of the curator responsible for the loan: American Museum of Natural History (AMNH), P. Vaurie; British Museum (Natural History) (BM), E. B. Britton; California Academy of Sciences (CAS), H. B. Leech; Canadian National Collection (CNC), H. F. Howden; Chicago Natural History Museum (CNHM), H. Dybas; Cornell University (CU), H. Dietrich; Illinois Natural History Survey (INHS), J. M. Kingsolver; D. G. Kissinger personal collection (Kissinger); University of Kansas (UK), G. Byers; Dirección General de Defensa Agricola, Mexico, D. F. (Mexico), R. Muniz; University of Michigan (UM), T. H. Hubbell; Texas Agricultural and Mechanical College (Texas), H. Burke; United States National Museum (USNM), R. E. Warner. Many thanks are accorded these people and institutions for the loan of specimens.

A lectotype is designated for *Isodacrys ovipennis* (Schaeffer), the only species of which the entire cotype series was seen. The type series of each of the Sharp and Champion species, except *minutus* Sharp, is split, with some cotypes in the United States National Museum and the remainder presumably in the British Museum. All the cotypes in the United States National Museum and representative cotypes from the British Museum were examined and were considered sufficient for the recognition of the respective species.

Treatment of previously described species is limited mainly to diagnostic characters, discussion of the types, and interpretation of the species in the light of additional specimens and new congeners. New species are described and discussed in detail.

Attempts to clean greasy specimens by soaking them in ammonia met with very little success, and even some crucial specimens remained so greasy or dirty that their color and the sculpture of their scales were obscured.

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[2] The first paper was published in: Proc. California Acad. Sci. (4), 29(10): 361-421.

In describing the curvature of the setae, the terms recumbent, completely arched, incompletely arched, and erect are used in the following way—recumbent: completely prostrate; completely arched: arcuate, with the apex of the seta touching the surface (Fig. 5); incompletely arched: decidedly curved, but with the apex not touching the surface (Figs. 6, 7); erect: straight or obsoletely curved and at a 45° to 90° angle with the surface (Figs. 8, 9).

In describing the shape of the segments of the antennal funicle, the anterior view is used; the segments appear to have slightly different shapes when viewed from other angles.

To obtain the relative lengths of the pronotum and prosternum, the pronotum was measured dorsally along the median line, and the prosternum was measured along the median line as seen in lateral view.

"Last abdominal segment" refers to the last ventral abdominal segment.

A map is presented to show the distribution of the species of *Isodacrys*.

Genus *Isodacrys* Sharp

Isodacrys Sharp, 1911, pp. 175-177. Champion, 1911, p. 341. Pierce, 1913, p. 401.

GENOTYPE.—*Isodacrys guatemalenum* Sharp, designated by Pierce, 1913, p. 401.

The genus *Isodacrys* is distinguished by the following characters. Size small, length 4 mm. or less. Beak short, deflected at approximately a right angle to body; sides parallel, vertical; with a distinct epistoma. Antennal scrobe lateral, abruptly bent, reaching ventral surface of beak. Antenna with first segment of funicle never slender; second segment of funicle shorter than first; antennal club short. Thorax with or without ocular vibrissae; pronotum distinctly longer than prosternum. Humerus obsolete to partially developed. Elytral declivity obsolete to pronounced, tumid. Fore leg scarcely or not at all enlarged; anterior tibia with or without teeth on inner edge. Fore coxae very close to or contiguous with anterior margin of prosternum, very narrowly separated. Tarsal claws free. Aedeagus (where known) arcuate, short and stout, except in *buchanani* where it is slender.

Several secondary characters should be mentioned. The setae across the apex of the beak are long and erect. The apical emargination of the beak varies in width interspecifically and does not always extend across the entire apex of the beak as stated in Howden, 1959, p. 363. The edge of the apical emargination may be very finely to moderately carinate, a character which varies widely intraspecifically. Likewise, the dorsal punctures, especially on the pronotum, vary intraspecifically and are not useful taxonomically.

The setae of the dorsal surface present excellent taxonomic characters. On the whole, there is little intraspecific variation in the size, shape or curvature of the setae, though they are subject to abrasion which may affect their appearance. The scales, also, are constant, and the majority of scales on any given surface will be as described for that species.

The characteristics of the ocular vibrissae are constant in species where the vibrissae are well-developed or absent. However, in species where they are poorly developed, the vibrissae are unstable and vary in size and number even on different sides of the same specimen. This variation is probably not due to abrasion, since the ocular vibrissae are closely appressed to the body and not particularly vulnerable.

Males were seen of only seven of the thirteen species of *Isodacrys,* so it is difficult to analyze the taxonomic value of the male genitalia. Obviously, it cannot be relied upon too heavily in specific diagnoses if males are so scarce or if some species are parthenogenetic. There appear to be reliable specific characters in the apex of the aedeagus.

Taxonomically, *Isodacrys* is usally considered with the tribe Tanymecini in Brachyderinae. Van Emden characterizes the tribe as having the pronotum "with a few, usually with many, cilia (vibrissae) at the sides of the front margin" (1944, p. 509). However, seven of the thirteen species now known do not have even vestigial vibrissae. Nevertheless, there are strong affinities between *Isodacrys* and some other Tanymecini, particularly *Pandeleteinus,* and this is the most logical place for the genus. Sharp (1911, p. 167) placed more importance on the poorly developed humeri than on the ocular vibrissae and placed the genus in his Group Sciaphilina, Otiorhynchinae Apterae (Van Emden's Brachyderini), which have connate tarsal claws.

Several other genera bear superficial resemblance to *Isodacrys* and differ from *Isodacrys* as follows: *Elissa* Csy. and *Minyomerus* Horn—head and beak much wider, genae inflated beneath oblique scrobes, eyes nearly touching pronotum; *Isodrusus* Sharp—humeri well-developed, tarsal claws connate; *Piscatopius* Sleeper—pronotum not produced anteriorly, pronotum much broader than long, "nasal plate absent" (specimens of this genus were not seen by the author), scrobe toothed (though this may be a specific rather than a generic character) and more obsoletely angled; *Pandeleteinus* Champion—humeri well-developed, aedeagus more slender and more arcuate, antennal club longer and more slender, secondary sexual characteristics less prononunced.

Nomenclatorially, the gender of *Isodacrys* has been erroneously interpreted in the specific names of other authors. Sharp gave his species names with masculine endings. Blackwelder (1947, p. 799) changed these to feminine. However, the root of *Isodacrys* appears to be "dakryon" (Greek for tear) and is neuter, hence the specific names are given neuter endings herein.

With the exception of records by Pierce (1909) of *I. ovipennis* and Burke (1959) of *I. burkei,* the only indications of the biology of *Isodacrys* are the meagre data on the labels of the specimens. Three species are recorded from herbaceous plants (lupine, cut flowers, lantana flowers, peas, watermelon, tomatoes, roadside vegetation), and three species are recorded from trees (oak, hackberry, *Condalia* and eucalyptus). These two different types of "hosts" do not appear to be coupled with taxonomic characters and therefore suggest that *Isodacrys* are general feeders as adults as is generally characteristic of the Brachyderinae.

There are several conspicuous groups of species in the genus. The species with non-denticulate fore tibiae (*brevirostre, geminatum, schwarzi, buchanani*) are very closely related to each other and distinct from their congeners. They probably merit subgeneric status, but *I. buchanani* is the only species of these four of which a male was seen. The aedeagus of *buchanani* (Figs. 21, 22) is very different from those of the other species of *Isodacrys* where the aedeagi were available for study. But without substantiation from the aedeagus of some of the other species in the group, there does not seem to be sufficient evidence for the erection of a new subgenus or genus.

The two Texas species with long subcylindrical elytra and elytral tumescences (*ovipennis* and *burkei*) also form a distinct unit. Another group, composed of *mexicanum* and *apicale,* is characterized by the partial development of the humeral angles, the short elytra and robust habitus. Groupings for the remaining five species, which include the genotype, are obscure.

KEY TO THE SPECIES OF *ISODACRYS*

1. Anterior tibiae denticulate or dentate on inner edge---------- 5
   Anterior tibiae without teeth or denticles on inner edge---------- 2
2. Setae clavate; slightly, incompletely arched (see introduction and fig. 7) at base of elytra, becoming erect at apex of elytra; thoracic setae completely arched (see introduction and fig. 5). Central Mexico----------(1) **BREVIROSTRE** N. SP.
   Setae of elytra lanceolate, nowhere erect; setae of thorax completely or incompletely arched ---------- 3
3. Sutural interval at declivity not or obsoletely tumescent, its scales granular and not pustulate or convex. Third interval not or obsoletely more prominent on declivity. Without ocular vibrissae. Central Mexico----------(2) **GEMINATUM** N. SP.
   Sutural interval at declivity tumid, its scales pustulate or convex. Ocular vibrissae present ---------- 4
4. With ocular vibrissae poorly developed, i.e., one or two slender, small vibrissae. In lateral view (fig. 10) the summit of declivity extends posteriorly further than apex of elytra. Third interval not raised on declivity. Northeastern Mexico---------- ----------(14) **BUCHANANI** N. SP.
   With cluster of ocular vibrissae. In lateral view the summit of declivity does not extend posteriorly further than apex of elytra. Third interval slightly raised on declivity. Northeastern Mexico----------(3) **SCHWARZI** Champ.
5. Prothorax with strong squamose ocular tooth, without ocular vibrissae. Southern Texas ----------(11) **BURKEI** N. SP.
   Prothorax without ocular tooth, with or without ocular vibrissae---------- 6
6. Setae of elytra very long, conspicuous, erect, parallel-sided (fig. 9). Guatemala ----------(5) **GUATEMALENUM** Sharp
   Setae of elytra not long; recumbent to incompletely arched, clavate or lanceolate--- 7
7. Thorax as broad as long. Elytra in profile evenly arcuate from base to apex. West central Mexico----------(6) **MINUTUM** Sharp
   Thorax longer than broad. Elytra in profile deflected towards apex forming a discernible declivity ---------- 8
8. Elytra rounded from base, humeri obsolete, form of elytra elliptical or oviform (figs. 2, 3) ---------- 9
   Elytra with sides subparallel at base, humeri poorly developed, form of elytra roughly subcylindrical (figs. 1, 4)---------- 11
9. Scales of dorsal surface pustulate or convex, with conspicuous raised margins. Setae of dorsal surface long, lanceolate, slender, completely arched. Durango, Mexico ----------(7) **CRISPUM** N. SP.
   Scales of dorsal surface granular, with inconspicuous margins or amarginate. Elytral setae stout, lanceolate or clavate, incompletely arched to erect---------- 10

10. Elytra oviform, widest before middle. Last abdominal segment of female tumid. Vera Cruz, Mexico----------(8) **ORIZABAE** Sharp
Elytra elliptical, widest at middle. Last abdominal segment of female flat. Honduras ----------(9) **ELLIPTICUM** N. SP.

11. Elytra with second and tenth intervals tumescent at their apices. Elytra somewhat constricted basally (fig. 1). Elytra 1.9 to 2.0 times length of thorax. Southern Texas----------(10) **OVIPENNIS** (Schffr.)
Elytra with second and tenth intervals not tumescent at their apices. Elytra not constricted basally (fig. 4). Elytra 1.5 to 1.8 times length of thorax. Mexico-------- 12

12. Base of elytra straight. Apices of elytra individually rounded (fig. 4). Apex of aedeagus acutely pointed (fig. 12). Sinaloa, Mexico----------(12) **APICALE** N. SP.
Base of elytra emarginate. Apices of elytra conjointly rounded. Apex of aedeagus broadly rounded (fig. 24). Central Mexico----------(13) **MEXICANUM** Sharp

1. *Isodacrys brevirostre* n. sp.

(Figures 7, 8, 25)

HOLOTYPE.—Female. Length 2.4 mm.; width 1.0 mm. Scales fuscous and various shades of pale brown, arranged in the following pattern: thorax with a pair of pale, approximate vittae; elytra slightly mottled, marked at declivity with a common crescentic fascia of pale scales bordered on both sides with fuscous scales. Occasional scales pale aqua. Scales of head and thorax finely margined, coarsely and irregularly granular, contiguous or not; scales of elytra more strongly margined, distinctly separated. Setae of head and beak broadly lanceolate, completely arched on vertex, becoming erect anteriorly. Setae of thorax lanceolate, completely arched. Setae of elytra broad, spatulate, slightly arched (fig. 7) at base of elytra, becoming erect (fig. 8) at apex; in single rows on each interval; very conspicuous.

Head and beak (fig. 25) very short, rather robust, with deep semi-confluent punctures. Beak with sides slightly convergent apically; median line deeply impressed on basal half; dorsal surface flat; apical emargination obtusely angled, not carinate, occupying two-fifths of anterior edge. Epistoma rugulose, its anterior margin truncate, slightly irregular. Apical two rows of scales less sculptured, aqua in color. Scrobe wide, obtusely angled, the horizontal portion about two-thirds the length of the vertical portion; separated from apex of beak and from eye by a single row of scales. First segment of funicle short, oviform; second segment very small, subspherical; segments three to seven short, about twice as wide as long. Eye small, prominent, more so posteriorly.

Thorax longer than wide, constrictions very feeble, sides very slightly arcuate between them. Pronotum 1.9 times as long as prosternum. Disc of thorax between constrictions subfoveate, some punctures confluent. Ocular vibrissae completely absent.

Elytra elliptical in dorsal view, 1.4 times longer than broad; 1.9 times as long as thorax. Elytra in profile (fig. 25) flat from base to apical third, thence gently sloping to declivity which is nearly vertical. Strial punctures moderate, inconspicuous. Intervals flattened with no elevations.

Fore leg equal to hind leg. Inner edge of fore tibia without teeth, with several long, slender bristle-like setae arising from small tubercles. Fore coxae very narrowly separated. Last abdominal segment flattened, apex elongate-arcuate.

Male. Unknown.

HOLOTYPE.—Female, 6 mi. N. Cuernavaca, Morelos, Mexico, 7500 ft., August 15, 1954, J. G. Chillcott (CNC No. 7383). Paratypes, 23 females: 2 females, same data as holotype; 1 female, 5 mi. N. Cuernavaca, Morelos, Mexico, Aug. 28, 1958, E. Mockford, on oak; 1 female, 10 mi. E. Toluca, 8900 ft. Mexico, Mexico, August 31, 1954, J. G. Chillcott; 7 females, Real de Arriba, Temescaltepec, Mexico, July, 1932, H. Hinton Collector, Pres. by E. C. Zimmerman; 11 females, Bejucos, Temescaltepec, Mexico, July 3, 1933, H. E. Hinton, R. L. Usinger Collectors, Pres. by

E. C. Zimmerman; 1 female, 10 mi. N. E. Jacala, Hidalgo, Mexico, Aug. 2, 1960, H. F. Howden, on *Condalia.*

Paratypes are in the following collections: CAS, CNC, Howden, USNM.

The paratypes vary in length from 2.3 to 2.8 mm., and in width from 0.9 to 1.2 mm. Color of the paratypes varies from fuscous to brown. Variations in the markings include: a band of pale scales around the scutellum, sides of beetle broadly pale, and thoracic vittae in the shape of a "V" instead of parallel.

Essentially, the characteristics of the scales and setae are constant, though occasionally the elytral scales have weaker margins and the setae are slightly narrower than in the holotype. The median line may be deeply impressed on basal half of beak as in the holotype, or reduced to a fovea between the eyes, or not impressed at all. In a few paratypes, there is a double instead of a single row of scales separating the scrobe from the eye. In several specimens one or both antennae have the third and fourth segments of the funicle partly fused, creating a six-segmented funicle. This is the only species of *Isodacrys* in which aberrant antennal segments were noticed. Punctuation of the pronotum is shallower in some paratypes.

Isodacrys brevirostre differs from the other species of *Isodacrys* with non-denticulate fore tibiae *(geminatum, schwarzi, buchanani)* in its conspicuous, erect, spatulate setae of the elytra, extremely short beak, and short oviform or sub-spherical first segment of the funicle.

2. *Isodacrys geminatum* n. sp.

HOLOTYPE.—Female. Length 2.7 mm.; width 1.3 mm. Elytra light brown, with a black-bordered white crescent on each side which extends from elytral base at the sixth interval to fifth interval on basal third; from there the white becomes obsolete and the black line continues diagonally to the summit of the declivity. Thorax indistinctly marked with vittae of light and dark cinereus scales. Scales coarsely granular, contiguous or not; margins extremely fine and incomplete on elytral scales, very fine and more nearly complete on thoracic scales. Setae very small, slender, lanceolate; completely arched on vertex and thorax, mostly incompletely arched on elytra, frons and beak.

Head and beak moderate in length, the dorsum slightly sinuate in profile. Frons slightly prominent between eyes. Beak with median line sulcate from between eyes to between insertion of the antennae; apical emargination not carinate, roughly right-angled, the vertex of the angle rounded. Epistoma concave, rugulose. Scrobe obtusely angled, horizontal portion about as long as vertical portion, very broad at angle, tapering to a point at either end; separated from eye by the width of one and a half scales. Funicle with first segment broadly clavate; second segment broadly clavate, about one-half the length of first segment; segments three to seven moniliform, each shorter than second segment, the distal segments becoming broader. Eye small, subcircular, prominent.

Thorax slightly longer than broad. Pronotum 2.0 times longer than prosternum. Basal and apical constrictions obsolete on disc, moderate on sides, the sides only slightly arcuate between the constrictions. Surface between constrictions subfoveate-punctate. Ocular vibrissae absent.

Elytra 2.0 times longer than thorax, 1.4 times longer than wide. Elytra in dorsal view subelliptical, widest just before middle. Base of elytra straight. Elytra in profile gently arcuate, apical deflection beginning just beyond the middle of elytra; declivity with upper half vertical, lower half oblique due to slight attenuation of elytral apices. Strial punctures moderate, the basal five or six punctures on the sutural stria set in slight depressions making them more conspicuous. Elytral intervals slightly convex.

Fore leg similar to hind leg; inner edge of fore tibia slightly sinuate, without teeth, denticles or tubercles. Fore coxae very narrowly separated. Last abdominal segment slightly convex medially; margin smooth and shiny; apex broadly rounded.

Male. Unknown.

HOLOTYPE.—Female, Texcoco, Mexico, Mexico, 7000 ft., Aug. 20, 1958, H. F. Howden Collector (CNC No. 7384). Paratypes, 3 females: same data as type (CNC, Howden).

The paratypes are 2.7 mm. long and 1.1 to 1.2 mm. wide. The paratypes are all less robust in the form of the elytra than in the holotype. The declivity may be more nearly vertical than in the holotype. Except for one specimen, the basal five or six punctures of the sutural stria are set in slight concavities as in the type—an obscure but distinctive character.

Of the species with non-denticulate fore tibiae, *Isodacrys geminatum* may be distinguished from *brevirostre* by its lanceolate, incompletely arched elytral setae and its incompletely margined scales; from *schwarzi* by its absence of ocular vibrissae; from *buchanani* by its unmodified sutural interval at declivity.

From *brevirostre,* its closest relative, *geminatum* also differs in having: elytra more convex in profile; beak slightly longer and slightly concave medially; frons more prominent between eyes; first segment of funicle usually longer and more slender; sides of thorax more arcuate; inner edge of fore tibia more sinuate; last abdominal segment slightly more convex and broader apically. Locality records indicate that *I. geminatum* may be sympatric with *brevirostre* (see map).

3. *Isodacrys schwarzi* Champion

Isodacrys schwarzi Champion, 1911, p. 341.

Female. Length 2.9 mm.; width 1.3 mm. Thorax brown, with a broad white crescentic vitta on each side; elytra dark brown, with an irregular fascia and sides of elytra white. Scales finely granular; on thorax convex, with gently turned-up margins; on elytra not margined, pustulate; on sutural interval at declivity more strongly pustulate to convex. Setae of dorsal surface inconspicuous, slender, completely arched on head and thorax; incompletely arched on elytra. Beak very short, dorsal surface flat; median line impressed from between anterior margin of eyes to between insertion of antennae; apical emargination not carinate, obtusely angled, the vertex of the angle rounded. Scrobe obtusely angled, separated from eye by the width of three scales. Eye small, round, prominent. Thorax 1.04 times longer than broad. Pronotum 1.7 times longer than prosternum. Thorax with basal and apical constrictions feeble, sides arcuate between them. Surface between constrictions moderately punctate. Ocular vibrissae well-developed. Elytra 2.0 times longer than thorax; 1.4 times longer than wide. Elytra in dorsal view subelliptical; base triangularly emarginate. Third interval slightly raised on declivity; sutural interval tumid on summit of declivity. Elytra in profile flattened to summit of declivity which is abrupt, vertical, and slightly concave just before apex. Fore tibia without teeth or denticles on inner edge; with long, slender straight hairs on inner edge. Fore coxae very narrowly separated. Last abdominal segment slightly concave on either side of midline, with apex rounded.

TYPE SERIES.—Two specimens. There is a female cotype in the United States National Museum labelled "Monterrey, Mex., 1.1, E. A. Schwarz," and a red label reading "TYPE."

ADDITIONAL SPECIMENS.—None.

The two drawings accompanying the original description are good, though the colors are more vivid than in the cotype examined.

Isodacrys schwarzi differs from the other species with non-denticulate fore tibiae in its well-developed ocular vibrissae; abrupt, vertical declivity which is slightly concave before the apex; its slender, incompletely arched elytral setae; and its scales which are finely granular, pustulate and not margined on the elytra.

4. *Isodacrys buchanani* n. sp.

(Figures 10, 21, 22)

HOLOTYPE.—Male. Length 2.3 mm.; width 0.9 mm. Pale cinereus and light brown. No distinct pattern, but sides of elytra, suture and a pair of broad vittae on thorax paler. Scales indistinctly margined, granular; scales of the sutural interval at declivity convex and nearly smooth. Setae very small and inconspicuous, slender, recumbent to completely arched.

Head and beak moderate in length, frons prominent between eyes. Beak flattened dorsally, scarcely deflected at apex; median line finely impressed at base; apical emargination carinate, broad, arcuate. Epistoma flat, except for a concave median notch; obsoletely sculptured. Scrobe obtusely angled, the horizontal portion about two-thirds the length of the vertical portion; separated from the eye by the width of two scales. Funicle with first segment clavate; second segment clavate, about one-half the length of first segment; segments three to seven cuboidal. Eye small, round, prominent.

Thorax 1.2 times longer than broad. Pronotum 1.5 times longer than prosternum. Basal and apical constrictions moderate laterally and dorsally; sides scarcely arcuate between constrictions. Punctuation of thorax obscured. Ocular vibrissae poorly developed, represented by a single vibrissa of moderate length.

Elytra 2.0 times longer than thorax, 1.5 times longer than wide. Elytra in dorsal view subelliptical, slightly wider medially. Base of elytra conspicuously arcuately emarginate. Sutural interval at declivity strongly produced posteriorly, extending beyond apex of elytra. Declivity in profile strongly indented just above apex. No other elevations on elytra. Elytra in profile flattened dorsally. Strial punctures small, obscured by scales.

Legs relatively long and slender. Fore leg similar to hind leg, but fore femur slightly larger than other femora. Inner edge of fore tibia slightly sinuate, without teeth, denticles or tubercles. Fore coxae minutely separated. Last abdominal segment slightly convex; apex broadly rounded and slightly emarginate medially.

Aedeagus (figs. 21, 22) long, slender; apex a 45° angle.

ALLOTYPE.—Female. Length 3.2 mm.; width 1.4 mm. Pale cinereus, light brown and ochraceous, with scattered fuscous patches sometimes due to abraded scales. Pattern as follows: thorax with a fine light brown median line flanked by a broad pale vitta which in turn is flanked by an immaculate, broad, light brown vitta which covers two-thirds of the side of the thorax; sides of elytra pale from base to just beyond middle where the pale area extends diagonally to suture; third elytral interval pale; sutural tumidity at declivity ochraceous. Scales granular, incompletely and indistinctly margined on head and thorax, more completely and more distinctly margined on disc of elytra. Scales of sutural tumidity convex, smooth and shining. Setae as in holotype. Form (fig. 10) more robust than in holotype. Beak longer than in holotype, slightly concave in profile and with a shallow fovea medially which is connected to apical emargination by a carina. Scrobe separated from eye by the width of three scales. Pronotum more robust than in holotype, 1.9 times longer than prosternum; sides distinctly arcuate between the constrictions. Ocular vibrissae represented by two feeble vibrissae on each side. Elytra 1.9 times longer than thorax, 1.4 times longer than wide. Sutural interval at declivity (fig. 10) more tumid than in holotype; apex of elytra extending posteriorly as far as the tumidity, and indentation of declivity in profile evenly arcuate. Legs similar to those of holotype. Last abdominal segment slightly more elongate than in holotype, obsoletely margined; apex rounded.

HOLOTYPE.—Male, from Mexico [intercepted at] Laredo, Texas, Oct. 31, 1945, Jones 45-19507 (USNM No. 65480). Allotype, female, same data as type (USNM). No paratypes. The accession number on these beetles was kindly checked by Miss Rose Ella Warner and the following information forwarded: "Lot No. 45-19507, from Laredo, Tex. no. 37700. 2 insects from cut flowers. Origin Mexico, found in baggage at foot bridge. Inspector Jones. October 31, 1945. Laredo, Tex. 37000. Ident.-Buchanan as *Isodacrys* sp.—New to coll. and prob. undescribed." Since cut flowers are a relatively perishable commodity, it suggests that the type locality is somewhere near Laredo in Tamaulipas or Nuevo Leon.

In this species the elytral declivity is much more strongly modified in both the male and female than in any other species of *Isodacrys*. The species may also be distinguished from species with non-denticulate fore tibiae by its very small, inconspicuous setae and poorly developed ocular vibrissae.

I. buchanani most closely resembles *I. schwarzi,* and geographically its range is probably the closest to that of *schwarzi* (Monterrey).

The aedeagus of *buchanani* is atypical of the genus. It strongly resembles the aedeagus found in the genus *Pandeleteinus* in its more slender, longer and evenly arcuate form. However, *buchanani* is readily distinguished from *Pandeleteinus* by its obsolete humeri and short, stout antennal club.

This species is named in commemoration of L. L. Buchanan who first recognized it as a new species of *Isodacrys*.

5. *Isodacrys guatemalenum* Sharp

(Figures 9, 16, 17)

Isodacrys guatemalenus Sharp, 1911, p. 175.

Isodacrys guatemalensis Sharp. Pierce, 1913, p. 401. Designated as genotype.

Isodacrys guatemalena Sharp. Blackwelder, 1947, p. 799.

Male. Length 2.9 mm.; width 1.3 mm. Females, length 3.1 to 3.4 mm.; width 1.4 to 1.6 mm. Light brown, marked with white, fuscous, and a conspicuous black "V" posteriorly bordered with white on elytra just before declivity. Scales of various irregular shapes, inconspicuously granular, with pronounced raised margins. Scales of sutural interval at declivity becoming convex, smooth, shining, amarginate. Setae of head and thorax vary from erect to completely arched; rather conspicuous on head and apicad of apical constriction of thorax. Elytral setae (fig. 9) very long, erect, parallel-sided; much more numerous on alternate intervals. Beak elongate. Scrobe obtusely angled, extending onto ventral surface of beak. Thorax with basal and apical constrictions moderate laterally and dorsally. Ocular vibrissae absent in females, poorly developed in the male. Elytra in dorsal view broadly elliptical, profile thickest at declivity; alternate intervals slightly raised. Anterior tibia with three or four acute moderate-sized teeth on inner edge. Last abdominal segment of male convex, truncate at apex. Last abdominal segment of female flattened, apex rounded. Aedeagus (figs. 16, 17) evenly arcuate, laterally constricted at basal third, opening occupying apical third.

TYPE SERIES.—Fifteen specimens. Examined: two female cotypes in the United States National Museum and a female cotype in the British Museum labelled, "Duenas, Guatemala, C. Champion."

ADDITIONAL SPECIMENS.—One male, 2 females, Antigua, Guatemala, 5000 ft., Aug. 16, 1947, Colls. C. & P. Vaurie, F. Johnson Donor (AMNH, Howden). Antigua is only about 8 miles from the type locality of Duenas (Vaurie and Vaurie 1949, pp. 11-12). These specimens generally agree with the original description and illustration though the color pattern is less distinct.

The long, very conspicuous elytral setae readily distinguish this species from all other *Isodacrys*.

6. *Isodacrys minutum* Sharp

Isodacrys minutus Sharp, 1911, pp. 176-177.

Isodacrys minuta Sharp. Blackwelder 1947, p. 799.

Females. Length 2.7 to 2.8 mm.; width 1.2 mm. Color ferrugineus with white, light brown and fuscous scales. Scales finely granular, without margins and mostly not contiguous. Setae small and inconspicuous, completely arched, becoming incompletely arched to erect on declivity. Scrobe obtusely angled, horizontal portion about two-thirds the length of the vertical portion, vertical portion very broad and deep, passing very close to eye and scarcely reaching ventrum. First segment of funicle short, ovoid; segments two to seven subequal in length, second segment cuboidal or ovoid, segments three to seven much broader than long. Eye small, prominent. Ocular vibrissae absent. Thorax very short, as broad as long, gently convex, basal and apical constrictions only vaguely indicated dorsally; deeply and closely punctate. Pronotum 1.6 times longer than prosternum. Elytra in dorsal view subelliptical, in profile evenly convex from base to apex. Legs short and stout. Fore femur enlarged at least as much as in some *Pandeleteius* (e.g. *cinereus, subtropicus*). Fore tibia with inner edge slightly sinuate and bearing three or four teeth. Fore coxae narrowly separated. Last segment of abdomen in female with raised margin, a slight depression at base on either side, and slightly convex at apex.

TYPE SERIES.—Four specimens. Examined: one female cotype in the British Museum labelled, "Omilteme, Guerrero, 8000 ft., July, H. H. Smith."

ADDITIONAL SPECIMENS.—Two females, Cerro Tancitaro, Michoacan, Mexico, Alt. 2800 ft., June 30, 1941, sweeping lupine, Coll. Hoogstraal and Haag (INHS, USNM). These specimens agree with the cotype examined except that they are testaceous (teneral) and have no discernible color pattern.

All the specimens examined are more slender than the figure in the original illustration and none have the wine color depicted in the copy of the book I used, though the pattern is like that of the cotype examined.

Isodacrys minutum is characterized by its short pronotum, short legs with enlarged fore femur and granular amarginate scales. It approaches *Pandeleteius* as much in the enlarged fore femora as in the short pronotum mentioned by Sharp in his description.

7. *Isodacrys crispum* n. sp.

(Figure 3)

HOLOTYPE.—Female. Length 3.3 mm.; width. 1.4 mm. Color obscure (specimen greasy), brown; markings obscure except on disc of thorax with its immaculate cinereus bordered on either side with a tortuose, fuscous vitta. Scales of head coarsely granular with complete carinate margins. Scales of thorax coarsely granular and/or

pustulate, with conspicuous complete carinate margins, not contiguous. Scales of elytra conspicuously pustulate and/or coarsely granular; margins mostly absent anteriorly, strongly carinate and slightly reflexed laterally and posteriorly; contiguous or not. Setae of dorsal surface conspicuous, moderately long, acutely pointed, lanceolate, completely arched or recumbent; much more numerous on sutural interval at declivity. On elytral intervals the apex of one seta often reaches or exceeds the base of the following seta.

Head and beak very short; frons prominent behind eyes. Beak narrow; apex obsoletely tumescent at middle, no impressed median line or fovea apparent; apical emargination poorly defined, broad, obtusely triangular; epistoma with its apical margin truncate, indented medially. Scrobe very deep, right-angled; horizontal portion about three-fifths as long as vertical portion; vertical portion separated from eye by two to three rows of scales and distinct to its termination on ventral surface of beak. Funicle with second segment a little shorter than first; segments three to seven equal, shorter than second segment, and cuboidal. Eye small, round, prominent.

Thorax 1.2 times longer than broad. Basal and apical constrictions moderate on disc and on sides; sides arcuate between constrictions. Pronotum 2.0 times as long as prosternum. No punctuation evident. Ocular vibrissae represented by two slender curved setae on left side, one on right side.

Elytra 1.9 times longer than thorax, 1.5 times longer than broad. Elytra (fig. 3) widest at middle, sides arcuate for basal five-sixths, thence slightly attenuate to apex; gently convex in profile. Intervals flattened on disc and at base, slightly convex on declivity; sutural interval scarcely more prominent at summit of declivity.

Legs moderate in length, rather stout. Fore tibia with five moderate teeth on inner edge. Fore coxae broadly separated for the genus. Last abdominal segment flattened, with a shallow depression at the base on either side; apex broadly rounded.

Male. Unknown.

HOLOTYPE.—Female, Palos Colorados, Durango, Mexico, 8000 ft., Aug. 5, 1947, D. Rockefeller Exp., Schramel (AMNH). No allotype or paratypes.

In form, *I. crispum* falls between *apicale* and *orizabae,* its elytra being more inflated than in *apicale* and less inflated than in *orizabae*. From these two species, and all other *Isodacrys, crispum* may be distinguished by: its setae which are moderately long, conspicuous, lanceolate and completely arched; its elytral scales which are pustulate and carinate-marginate on their lateral and posterior edges; its very short narrow beak with right-angled scrobe; and its head prominent behind the eyes as in *Pandeleteinus*. These characters will probably exhibit little intraspecific variation and should enable the proper identification of additional specimens of the species when found.

I. crispum bears a strong superficial resemblance to *Isodrusus debilis* Sharp, but it differs in the lack of humeri, broader elytra and free tarsal claws.

8. *Isodacrys orizabae* Sharp

Isodacrys orizabae Sharp, 1911, p. 176.

Male. Length 3.0 mm.; width 1.4 mm. Females, length 3.3 to 3.7 mm., width 1.6 mm. Color brown with whitish and fuscous markings. Scales granular, very finely margined. Setae of elytra broad, clavate, erect to incompletely arched; setae of head and thorax more slender, completely to incompletely arched. Apical emargination of beak acute, carinate, occupying over one-half of apical edge. Median line obsoletely impressed on beak to frons. Scrobe obtusely angled; separated from eyes by the width of one scale. Funicle with first segment clavate, second segment clavate and about one-half the length of the first, segments three to seven strongly moniliform,

segment seven much broader than the others. Eye moderate. Thorax 1.12 times longer than broad, pronotum 1.7 times longer than prosternum. Thorax with disc foveate-punctate; basal and apical constrictions moderate dorsally and laterally. Ocular vibrissae absent or poorly developed. Elytra of male subelliptical; elytra of females broadly oviform, broadest at basal third; fifth interval slightly raised at declivity which is weak. Body in profile thickest just before middle. Fore femur distinctly enlarged; fore tibia with four or five teeth on inner edge. Fore coxae separated rather broadly for the genus. Apex of last abdominal segment of male deflected and arcuately emarginate; last abdominal segment of female tumid medially, broadly rounded at apex. Aedeagus strongly resembling that of *I. guatemalenum*.

TYPE SERIES.—Nine specimens: "Mexico (Truqui), Orizaba (Salle, H. H. Smith)." Specimens examined: a female cotype in the United States National Museum and a male and a female cotype in the British Museum labelled, "Orizaba, H. S. & F. D. G. Dec. 1887." The United States National Museum specimen is greasy and its vestiture is not in good condition; some scales are abraded and some setae are broken. The British Museum specimens are in good condition and the color and pattern are as in the original illustration.

ADDITIONAL SPECIMENS.—None.

Isodacrys orizabae is related to *minutum* and *guatemalenum*. Of all *Isodacrys, orizabae* has the most oviform elytra and the most tumid last abdominal segment in the female. It may also be distinguished by its granular scales and stout, short, incompletely arched to erect elytral setae.

9. *Isodacrys ellipticum* n. sp.

(Figure 2)

HOLOTYPE.—Female. Length 2.7 mm.; width 1.3 mm. Color obscured (specimen greasy). Scales granular, margined or not. Setae of head and thorax mostly abraded, remainder very small, incompletely arched, becoming erect on beak. Setae of elytra short, stout, clavate, incompletely arched, becoming longer and more erect on declivity. Beak slightly deflected at apex; apical emargination obtusely angled, carinate, occupying over one-half of apical edge. On the beak a short median carina extends from the apex of emargination and terminates in a fovea between the insertion of the antennae. Scrobe obtusely angled; horizontal portion long, subequal to vertical portion; vertical portion separated from eye by the width of about two scales. Funicle with first segment broadly conical; segments two to five equal, cubical; segments six and seven large and slightly moniliform. Eye small, moderately prominent.

Thorax 1.18 times longer than broad. Pronotum 1.7 times longer than prosternum. Disc of thorax with sub-foveate punctures. Thorax cylindrical in dorsal view, sides nearly straight; basal and apical constrictions distinct but not conspicuous in profile or dorsal outline. Ocular vibrissae absent.

Elytra quite convex transversely; sides in dorsal view elliptical (fig. 2), broadest at middle. Elytra 1.9 times longer than thorax. Elytral intervals not raised or tumid. In profile, body thickest at middle; elytra evenly arcuate from base to summit of declivity which is oblique to apex.

Fore tibia with three teeth and several minute denticles on the inner edge. Fore coxae rather broadly separated for the genus. Last abdominal segment nearly flat; finely carinately margined; without depressions at base; apex rounded.

Male. Unknown.

HOLOTYPE.—Female. Camara, Zamorano, Honduras, September, 1953, N. K. Krauss, Flowers Lantana, 4369, 53-11260 (USNM No. 65481). No allotype or paratypes.

The holotype is in poor condition. Only one tarsus is complete, many of the setae of the disc of the elytra and thorax are absent, and the sculpture and color of the scales is obscured by dirt or grease. The ocular vibrissae are absent as noted in the description; considering the condition of the specimen, it is possible that they have been abraded and that their absence is atypical.

I. ellipticum is quite similar to *brevirostre* in size, form and setae. It differs from *brevirostre* in having its fore tibiae dentate, elytra much more convex and broader, setae quite similar but less erect on disc of elytra, apical emargination of beak deeper and carinate, fovea on beak between insertion of antennae instead of between the eyes, fore coxae much more widely separated, and legs stouter and longer.

Of the species with dentate fore tibiae, *ellipticum* most closely resembles *orizabae,* the general characteristics of the setae, beak, prothorax and widely separated fore coxae being particularly similar. *I. ellipticum* has quite different elytra: the sides are very evenly elliptical, broadest at the middle instead of the basal third, much more convex transversely and with no elevations on any of the intervals. The other principal differences are in the last abdominal segment of the female which is flat instead of tumid; the eyes which are smaller and more convex; and segments two to five of the funicle which are cubical instead of moniliform. Of course, these comparisons were made with only four specimens, but the characters mentioned are of a nature which should remain valid within the bounds of normal intraspecific variation as exhibited in other species of *Isodacrys.* If the species is not parthenogenetic, the male may have the elytra less inflated and therefore less strikingly elliptical.

The type locality (see map) of *I. ellipticum* is the farthest extension of the range of the genus into Central America.

10. *Isodacrys ovipennis* (Schaeffer)

(Figures 1, 18, 19)

Pandeletejus ovipennis Schaeffer, 1908, p. 215. Pierce, 1909, p. 359.

Isodacrys ovipennis (Schaeffer). Pierce, 1913, p. 401.

Males. Length 3.0 to 3.6 mm.; width 1.2 to 1.3 mm. Females, length 3.1 to 3.6 mm.; width 1.3 to 1.4 mm. Color varies from nearly immaculate cinereus to an elaborately patterned cinereus, with maximum expression as follows: thorax with two pale and two dark vittae on each side of fine pale median line; elytra with sides to seventh interval pale from base to basal third where a lunule extends across fifth interval, a parallel lunule at apical third extends to suture, third interval pale from base to first lunule. Scales granular, obsoletely margined; not different on sutural interval at declivity. Setae small, inconspicuous, lanceolate; completely or incompletely arched on head and thorax, incompletely arched on most of elytra. Head globose; beak cuboidal. Antennae with first segment of funicle clavate, segments two to six subequal, becoming shorter and broader, segment seven moniliform. Eye small, round, not at all prominent. Pronotum usually 1.5 times longer than prosternum. Basal and apical constrictions moderate. Ocular vibrissae represented by a cluster or row of three to six vibrissae of various lengths. Elytra very distinctive (fig. 1), 1.9 to 2.0 times length of thorax. Elytra very narrow at base, widest at middle; in lateral view thickest at apical third. Base of elytra slightly arcuately emarginate; slightly raised and with the basal puncture of each stria foveate, presenting the total effect of a constriction at base. Elytra strongly convex transversely. Fifth and sixth intervals

prominent at their terminations on apical fifth; second and tenth intervals quite prominent at their junction; both of these prominences conspicuous in dorsal outline. Elytral intervals slightly convex; sutural interval not more convex or raised at declivity. Fore femur definitely larger than other femora. Inner edge of fore tibia straight with three or four distinct teeth and several denticles among the hairs of the expanded apex. Fore coxae narrowly separated. Last abdominal segment very little different in the sexes; convex; apex truncate in males; slightly elongate in females. Aedeagus (figs. 18, 19) arcuate, tubular; apex forming approximately a 45° angle.

LECTOTYPE.—Here designated and labelled "Type." Female, 3.6 mm. long, 1.4 mm. wide. The first cotype in the row and bearing the label "Pandeletejus ovipennis Schaef." in script. The specimen is in excellent condition.

TYPE SERIES.—Five males, 6 females, all in United States National Museum. Cotype No. 42474. Lectotype "EsperRch, Brownsville, Tex. VII.28, Brooklyn Museum Collection 1929." Other cotypes are labelled: Esprza Rch, Brownsville, Tex., VII.22 (3 males, 2 females), VII.28 (1 female), VIII.16 (1 male, 1 female), VIII.18 (1 female), VIII.22 (1 male).

ADDITONAL SPECIMENS.—Seven males. 1 male, Brownsville, Texas, April 20, 1937, on Eucalyptus, Mexico (Howden); 1 male, Brownsville, Texas, June, Wickham (USNM); 1 male, Brownsville, Texas, July 8, 1908, Sweepings, S. Texas Garden (USNM); 1 male, Pt. Isabel, Texas, Wickham (USNM); 3 males, Pt. Isabel, Texas, July 22, 1906, Coll. by A. B. Wolcott, Liljeblad Collection (Howden, UM).

I. ovipennis is readily distinguished from all other *Isodacrys* by the form of its elytra, which are cuneate or elongate-elliptical, very narrow basally, and with the apices of the second and fifth intervals tumid. *I. burkei* approaches this condition, but in *burkei* the second and fifth intervals are only obsoletely prominent, if at all. *I. ovipennis* also differs from *burkei* in its more shallowly punctured pronotum, ocular vibrissae, without an ocular tooth, and scales indistinctly margined. The aedeagi of the two species are quite similar.

I. ovipennis and *burkei* are the only two species recorded from Texas (see map) and their ranges as now known do not overlap. Pierce (1913, p. 401) records *I. ovipennis* from Victoria, but specimens were seen from only Brownsville and its immediate vicinity.

11. *Isodacrys burkei* n. sp.

(Figures 5, 13, 14, 20)

HOLOTYPE.—Male. Length 3.0 mm.; width 1.1 mm. Scales pale cinereus, light brown and fuscous arranged in the following pattern: thorax with broad median vitta pale shading to fuscous near sides; elytra with suture pale, second interval mottled dark brown, remainder of disc mottled light brown, sides with mottled pale area irregularly bordered with fuscous extending before middle in an arm onto fifth interval and extending obliquely across summit of declivity to suture. Scales faintly alutaceous; slightly pustulate on elytra, not pustulate on head or thorax. Scales of head and thorax with margins conspicuously reflexed anteriorly and laterally; scales of elytra with margins conspicuously reflexed posteriorly and laterally; scales of sutural interval at declivity quite convex, margins inconspicuous. Setae of dorsal surface small, inconspicuous, completely arched (fig. 5).

Head and beak moderate in size. Dorsal surface of beak nearly flat; median line impressed from just before the eyes to the apical emargination which is distinctly carinate and slightly less than a 90° angle. Epistoma flat, lightly punctate; anterior

margin with an asymmetrical indentation. Scrobe obtusely angled, wide; horizontal portion five-sevenths as long as vertical portion; separated from eye by the width of three scales. Funicle with first segment oviform; second segment clavate, about one-half the length of the first; third segment very small, cuboidal; segments four to seven moniliform, the distal segments larger. Eye moderate in size, suboblong; not at all prominent, not extending beyond side of head in anterior view. A vague keel extends along dorso-lateral edge of beak from scrobe to eye.

Thorax 1.2 times longer than wide. Pronotum 1.8 times longer than prosternum. Thorax subcylindrical, flattened dorsally; basal and apical constrictions obsolete, the sides slightly arcuate at middle. Disc of thorax foveate. Anterior margin on side of thorax with a conspicuous convex squamose tooth (fig. 20) directed between eye and scrobe; without ocular vibrissae.

Elytra (fig. 20) subcylindrical, widest at middle; 1.8 times longer than thorax; 1.6 times longer than wide. Base of elytra obsoletely, arcuately emarginate. Alternate intervals much wider and slightly more convex, the third and fifth intervals more conspicuously convex basally. Fifth interval tumescent at its apex; second and tenth intervals tumescent at their apical junction; both tumescences visible in dorsal outline, though neither is as pronounced as in *ovipennis*. Elytra flattened dorsally. Sutural interval at declivity slightly enlarged. Declivity vertical, gently rounded at its summit, its profile interruped by the tumescence of the second interval and the slightly extended apices of the elytra which are broadly, conjointly rounded.

Fore legs more robust than other legs. Right fore tibia with three, left fore tibia with four moderate teeth on inner edge which is straight. Fore coxae moderately separated. Last abdominal segment slightly convex; apex broadly rounded.

Aedeagus (figs. 13, 14) very slender, arcuate, its tip slightly attenuated and rounded.

ALLOTYPE.—Female. Length 3.6 mm.; width 1.5 mm. Form much more robust than in holotype. Color as in holotype, but pattern more distinct. Thorax with disc dark brown, except for a pale fine median line; pleura broadly pale. Scales and setae as in holotype. Head and beak as in holotype, but the vague keel along the side of the beak is reduced to an indistinct tumescence over the eye. All segments of the antennal funicle less rounded and more cuboidal or cylindrical. Thorax more robust than in holotype, 1.2 times longer than wide; base conspicuously wider than apex; pronotum 1.6 times longer than prosternum. Elytra much more robust than in holotype, sides more arcuate. Elytra 2.0 times longer than thorax; 1.5 times longer than wide. Basal strial punctures deeper, alternate intervals more convex, and base of elytra more keeled than in the holotype; similar to the base of the elytra of *ovipennis*. Fifth interval less tumescent at its apex. Fore tibia with four teeth on inner edge. Fore coxae slightly more narrowly separated. Last abdominal segment slightly convex, more elongate; apex rounded.

HOLOTYPE.—Male, Brazos Co., Texas, May 12, 1960, H. R. Burke Coll. (Texas). Allotype, female, same data as holotype (Texas). Paratypes, 43 males, 46 females: 26 males, 27 females, same data as holotype; 3 males, 5 females, Brazos Co., Texas, May 8, 1956, H. R. Burke Collector; 2 females, College Station, Texas, May 3, May 7, 1931, H. J. Reinhard Collector, #268, swept from weeds, #2082, sweeping; 2 males, 2 females, Gonzales Co., April 17, 1955, H. R. Burke, damaging foliage of watermelon and peas; 11 males, 6 females, Lee Co., Texas, May 29, 1960, S. D. and H. R. Burke Collectors, sweeping low vegetation along roadside; 1 female, Peeler, Texas, June 22, 1938, L. W. Hepner; 2 males, 2 females, Milano, Texas, Milam County #7315, on tomato plants, very numerous, eating stems particularly, causing plants to fall over.

Paratypes are in the following collections: British Museum (Natural History), CNHM, CNC (No. 7386), CU, Mexico, Texas, UK, USNM, Howden, Kissinger.

Male paratypes vary in length from 2.7 to 3.4 mm., and in width from 1.1 to 1.2 mm. Female paratypes vary in length from 3.2 to 4.0 mm., and

in width from 1.3 to 1.6 mm. Color in the paratypes is reduced in some to a faintly mottled pale brown or pale cinereus. The allotype bears the most distinct markings. The head and beak are quite uniform, the lateral keel of the beak being never more strongly expressed than in the holotype and usually obsolete. The robust habitus of the head and beak is quite distinctive. The ocular tooth on the thorax is well developed in all paratypes and varies little, and then in the acuteness or bluntness of the apex. In no specimens are there any ocular vibrissae. The elytra are variable in several aspects. The sides of some males are subparallel. The alternate intervals are generally wider and more convex in females than in males. In many paratypes of both sexes the base of the elytra is unmodified, i.e., there is no keel, the basal strial punctures are not deeper than other strial punctures, and the alternate intervals are not more convex. The tumescence of the apex of the fifth interval varies considerably and is obsolete in some. The tumescence at the junction of the second and tenth intervals also varies, but is always present. The teeth of the inner edge of the fore tibiae are always fuscous and sharp and vary in number from one to four, three or four being the usual number. The apex of the aedeagus varies in acuteness: in most specimens the apex is like that of the holotype (Fig. 14), but in some it is more blunt and less attenuate. In one specimen it is much more acute, approaching the shape of the apex in *apicale,* but not as attenuated as in *apicale.*

I. burkei is easily distinguished from all other *Isodacrys* by the conspicuous, convex, squamose thoracic tooth without ocular vibrissae. No other *Isodacrys* has any modifications of the anterior margin of the thorax other than ocular vibrissae. Other distinguishing characteristics are the robust head and beak, subcylindrical thorax, dorsally flattened elytra, and the "imbricated" scales.

I. ovipennis and *burkei* are quite closely related and differ from the other species of *Isodacrys* by their subcylindrical habitus with elytral tumescences and similar aedeagi. *I. burkei* differs from *ovipennis* principally in its more robust head and beak; shorter stouter antennal club; shorter, stouter first segment of funicle; "imbricated" scales instead of obsoletely margined scales; elytral setae more slender and fully arched instead of incompletely arched; less distinct "constriction" at base of elytra; less convex, dorsally flattened body; and shorter, stouter legs. The aedeagi are so similar that it would be difficult if not impossible to identify the species on the basis of the aedeagus alone. These two species are the only ones which are known in the United States (see map) and so far are known only from the United States. *I. burkei* has been collected in five counties of Texas: Brazos, Gonzales, Lee, Leon, Milam.

Dr. Burke states in correspondence that he collected the 54 specimens on May 12 "in a period of about one hour, indicating that they are rather abundant. However, I have not yet been able to single out the plant on which they are feeding. . . . These specimens were swept from low, mixed vegetation in a roadside ditch."

This species is named in honor of Dr. Horace R. Burke who collected all but three specimens of the type series.

12. *Isodacrys apicale* n. sp.

(Figures 4, 6, 11, 12, 15)

HOLOTYPE.—Male. Length 2.9 mm.; width 1.3 mm. Light brown and cinereus with no distinct pattern. Scales of head and thorax finely granular, faintly pustulate, with fine margins. Scales on disc of elytra finely granular, faintly pustulate becoming more strongly pustulate towards declivity, with slightly reflexed margins laterally and posteriorly presenting an imbricated appearance; scales of entire declivity strongly convex, smooth, and without margins. Setae of head and thorax small and very inconspicuous, completely arched. Setae of elytra short, incompletely arched (fig. 6), broad; becoming longer and more erect on declivity, more numerous on sutural interval at declivity.

Head and beak moderate in size. Sides of beak slightly convergent apically; dorsum slightly concave with an indistinct shallow fovea at either end of a fine median line; apex slightly deflected, arcuately emarginate, not carinate. Epistoma on lower plane with its anterior margin truncate with apex of beak. Scrobe (fig. 15) very obtusely angled, the horizontal portion four-fifths as long as the vertical portion; separated from eye by two rows of scales. Funicle with first segment ovoid; second segment subcylindrical, almost as long as first; segments three to seven shorter than first and second segments but subequal to each other, cuboidal, the distal segments submoniliform. Eye large, round, not very prominent in dorsal view.

Thorax 1.07 times longer than broad. Pronotum 1.9 times as long as prosternum. Basal and apical constrictions obsolete on disc, less obsolete on sides; sides slightly arcuate between constrictions. Punctuation obscured by scales. Ocular vibrissae represented by several short setae and several long setae which almost reach eye.

Elytra (fig. 4) subcylindrical with humeri feebly developed. Elytra 1.47 times longer than broad; 1.7 times longer than thorax. Base of elytra nearly straight (fig. 4). Sides of elytra subparallel for basal fourth-fifths; apices individually rounded. Elytra in profile (fig. 15) with disc flattened, gently sloping to base and to declivity which is not well defined. Elytral intervals regular, slightly convex, not raised at base or apex; sutural interval not raised at declivity.

Legs relatively long, similar to each other. Tibiae slender and expanded at apex; fore tibia with four acute teeth on inner edge. Fore coxae very narrowly separated. Last abdominal segment deflected on sides and apex, emarginate at apex.

Aedeagus (figs. 11, 12) short, stout, curved; apex attenuated into acute point.

ALLOTYPE.—Female. Length 3.6 mm.; width 1.6 mm. Brown, marked with tan as follows: head and pleura of thorax and elytra pale; disc of thorax with pale, apically convergent vittae; elytra with a short, pale fascia at middle. More robust than holotype and differing from it as follows: scales of elytra more conspicuously punctate; eye with ventral margin straight; thorax 1.06 times longer than broad; thorax with fine, sparse punctures basally, becoming impunctate apically; elytra 1.44 times longer than broad, 1.8 times longer than thorax; humeri more prominent; apices of elytra more attenuate; left fore tibia with six teeth on inner edge, right fore tibia with five teeth; last abdominal segment convex with margin finely carinate, apex broadly rounded.

HOLOTYPE.—Male, Choix, Sinaloa, August 13, 1935, 151/35 (CNC No. 7385). Allotype, female, same data as holotype (Mexico). Paratype, 1 female, same data as type, Algodon (Howden).

Paratype, length 3.3 mm.; width 1.4 mm. Intermediate in habitus and differing from holotype and allotype in the following minor respects: scales of declivity less convex and more like the scales of disc of elytra; fore tibia with four teeth and several denticles on inner edge; last abdominal segment truncate at apex.

I. apicale is nearest *mexicanum* which it strongly resembles in its short cylindrical habitus. From *mexicanum* it is most readily distinguished by the following characters: apex of aedeagus acutely pointed instead of broadly

rounded; apices of elytra individually rounded; base of elytra straight instead of emarginate; elytral intervals not raised or tumescent at base, apex, or on declivity; setae of elytra incompletely arched becoming longer and more erect on declivity. The posteriorly imbricated scales of the elytra are also different from the simply margined scales of the elytra of *mexicanum,* but there is some variation in the degree of imbrication and only a little dirt will obscure the character.

The ocular vibrissae are longer in the three specimens of *apicale* than in any other *Isodacrys* examined. The eyes of *apicale* are larger than in any other specimens of the genus at hand except *guatemalenum.* The humeral angles reach their greatest development in the genus in this species and *mexicanum.* None of the specimens of *apicale* were dissected for the presence of wings, but I suspect they are absent or vestigial.

The type locality of Choix is in northern Sinaloa, the westernmost record of *Isodacrys.*

13. *Isodacrys mexicanum* Sharp

(Figures 23, 24)

Isodacrys mexicanus Sharp, 1911, p. 176.

Isodacrys mexicana Sharp. Blackwelder, 1947, p. 799.

Males. Length 2.5 to 2.8 mm.; width 1.0 to 1.1 mm. Females, length 2.7 to 3.2 mm.; width 1.1 to 1.4 mm. Scales finely margined, granular; some scales finely pustulate. Scales of suture at declivity becoming strongly pustulate. Entire dorsal surface with small, lanceolate, completely arched setae which are depressed and very inconspicuous on vertex and disc of pronotum, conspicuous and more numerous on sutural interval at declivity. Apical emargination of beak carinate, roughly right-angled. Scrobe approximately right-angled. Thorax long, sides moderately arcuate; basal and apical constrictions weak, especially dorsally. Ocular vibrissae poorly developed, represented by one to three slender, long hairs. Base of elytra faintly to conspicuously arcuately emarginate. Length of elytra 1.5 times length of thorax in males; 1.7 times length of thorax in females. Sides of elytra subparallel from base to middle, thence gradually converging to apex. Elytra in profile thickest at about middle. Intervals three and five raised at base and sometimes at apex; sutural interval tumescent at declivity. Fore tibia with three to six teeth on inner edge. Last abdominal segment of male with sides deflected; deeply emarginate at apex. Last abdominal segment of female with large shallow depression on either side at base; apex truncate or slightly emarginate. Aedeagus (figs. 23, 24) short, stout, curved; with a long, thin, apical attentuation which is parallel-sided and broadly rounded at the apex.

TYPE SERIES.—Five specimens. Specimens examined: a female cotype in the United States National Museum and a male cotype in the British Museum labelled, "Guanajuato, Mexico, Salle Coll."

ADDITIONAL SPECIMENS.—Three males, 9 females. 1 male, 5 miles N. Cuernavaca, Morelos, on oak, Aug. 28, 1958, E. Mockford; 2 males, 9 females, YMCA Camp, Tepoztlan, Morelos, Aug. 21, 1958, H. F. Howden (CNC, Howden). These additional specimens agree completely with the cotypes examined and with the brief original description and illustration, but in none of the specimens is the color pattern as distinct.

This beetle has a very distinctive habitus with its long thorax and short, subcylindrical form. From other species with ocular vibrissae and dentate fore tibiae, it may also be separated by its emarginate elytral base; small, completely arched setae; and broadly rounded apex of aedeagus.

The additional specimens were taken by beating trees at an elevation of approximately 5000 feet near the southern edge of the highlands.

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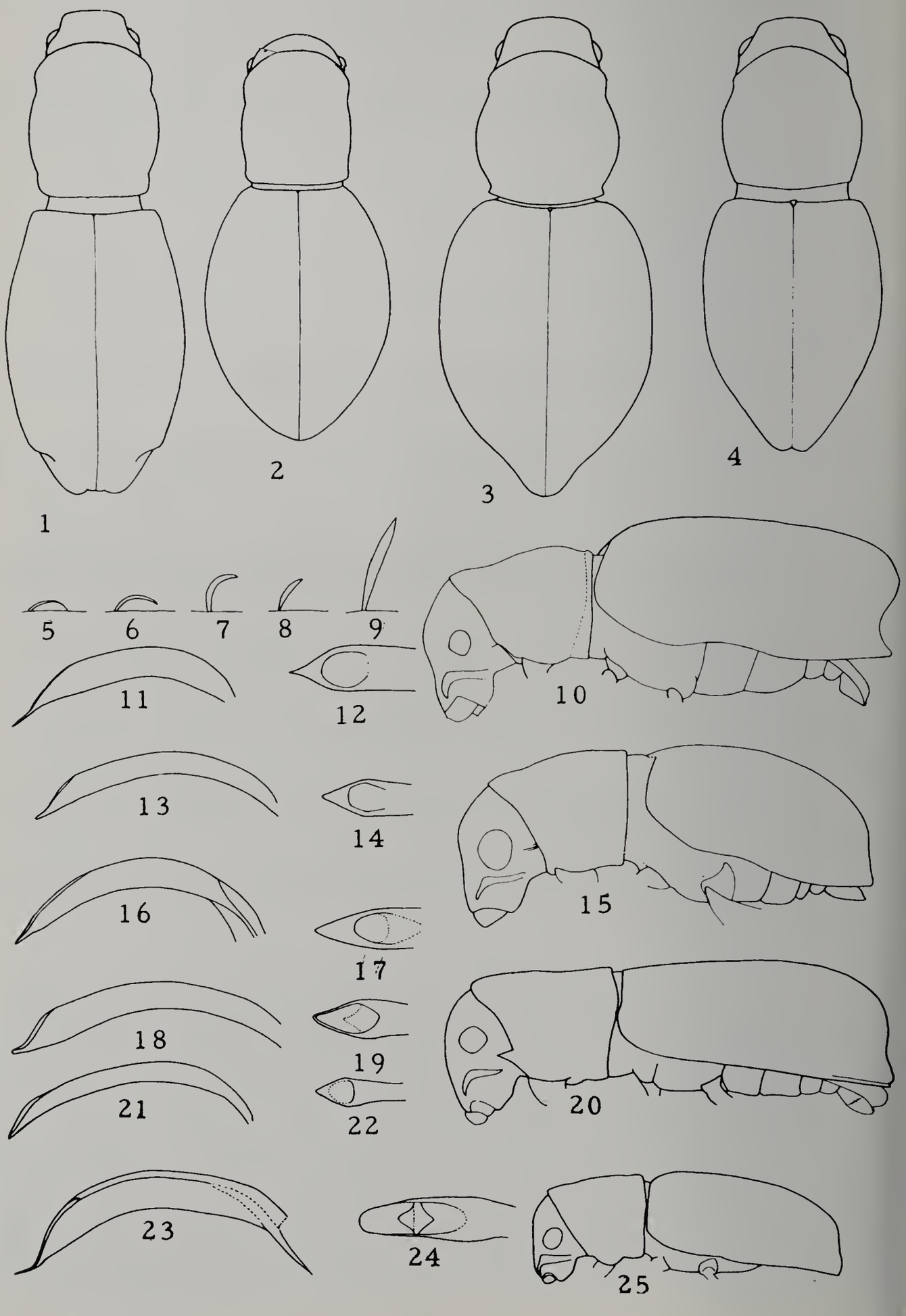
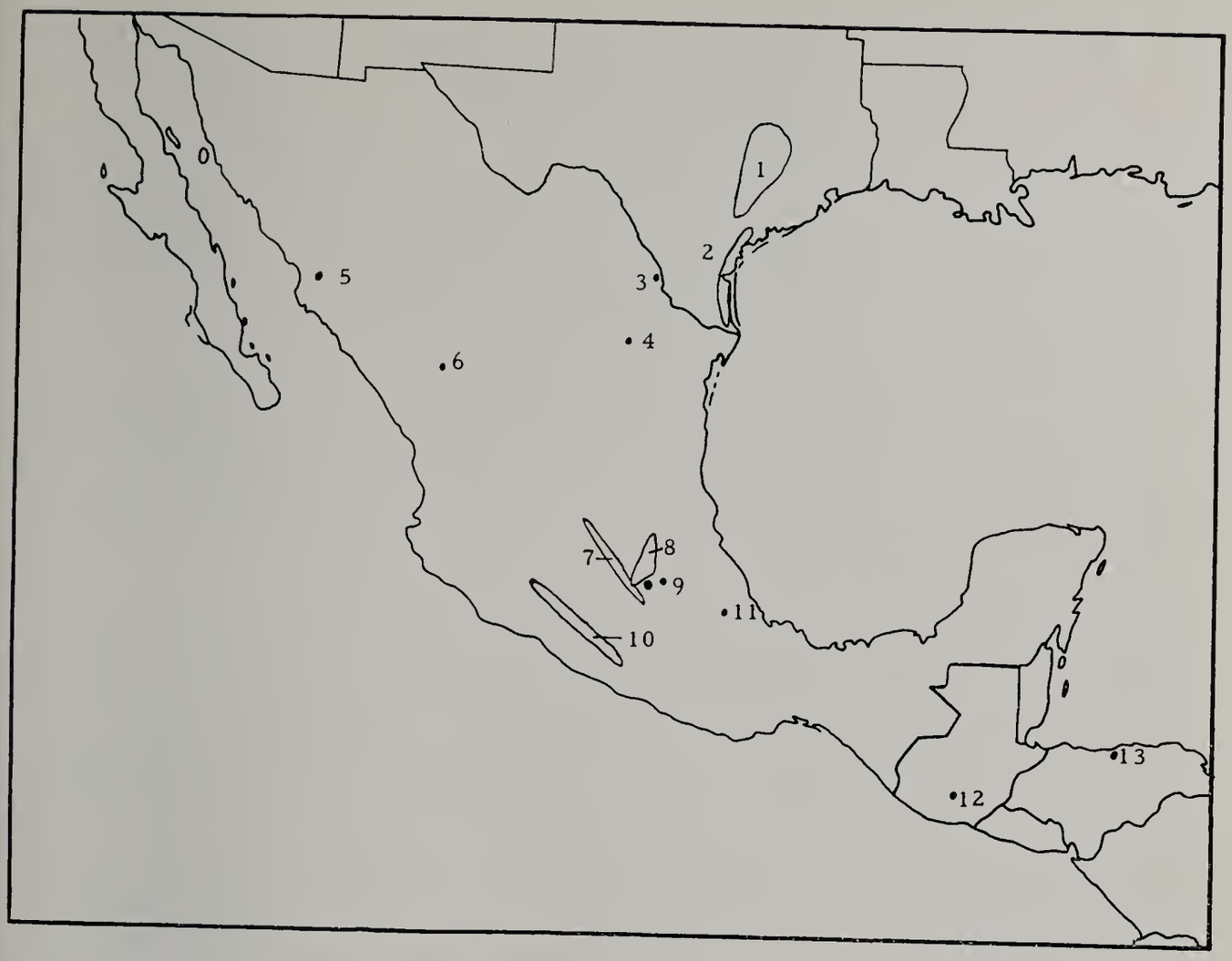
Fig. 1, dorsal view of *Isodacrys ovipennis* (Schffr.) cotype male; Fig. 2, dorsal view of *I. ellipticum* n. sp. holotype; Fig. 3, dorsal view of *I. crispum* n. sp. holotype; Fig. 4, dorsal view of *I. apicale* n. sp. holotype; Fig. 5, typical completely arched seta of *I. burkei* n. sp.; Fig. 6, typical incompletely arched seta of *I. apicale* n. sp.; Fig. 7, typical slightly arched seta of *I. brevirostre* n. sp.; Fig. 8, typical erect seta of *I. brevirostre* n. sp; Fig. 9, typical erect seta of *I. guatemalenum* Sharp; Fig. 10, lateral view of *I. buchanani* n. sp. allotype; Fig. 11, lateral view of aedeagus of *I. apicale* n. sp. holotype; Fig. 12, dorsal view of apex of aedeagus of *I. apicale* n. sp. holotype; Fig. 13, lateral view of aedeagus of *I. burkei* n. sp. holotype; Fig. 14, dorsal view of apex of aedeagus of *I. burkei* n. sp. holotype; Fig. 15, lateral view of *I. apicale* n. sp. holotype; Fig. 16, lateral view of aedeagus of *I. guatemalenum* Sharp; Fig. 17, dorsal view of apex of aedeagus of *I. guatemalenum* Sharp; Fig. 18, lateral view of aedeagus of *I. ovipennis* (Schffr.); Fig. 19, dorsal view of apex of aedeagus of *I. ovipennis* (Schffr.); Fig. 20, lateral view of *I. burkei* n. sp. male; Fig. 21, lateral

view of aedeagus of *I. buchanani* n. sp. holotype; FIG. 22, dorsal view of apex of aedeagus of *I. buchanani* n. sp. holotype; FIG. 23, lateral view of aedeagus of *I. mexicanum* Sharp; FIG. 24, dorsal view of apex of aedeagus of *I. mexicanum* Sharp; FIG. 25, lateral view of *I. brevirostre* n. sp. female.





Distribution of species of *Isodacrys:* 1, *I. burkei* n. sp.; 2, *I. ovipennis* (Schffr.); 3, *I. buchanani* n. sp.; 4, *I. schwarzi* Champ.; 5, *I. apicale* n. sp.; 6, *I. crispum* n. sp.; 7, *I. mexicanum* Sharp; 8, *I. brevirostre* n. sp.; 9, *I. geminatum* n. sp.; 10, *I. minutum* Sharp; 11, *I. orizabae* Sharp; 12, *I. guatemalenum* Sharp; 13, *I. ellipticum* n. sp.

The circled dot near "9" represents Mexico City.